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Via FOIA online

October 15, 2019

National FOIA Office
U.S. Environmental Protection Agency
1200 Pennsylvania NW, (2310A)
Washington, DC 20460

Re: Request for Information Act under the Freedom of Information Act

To Whom it May Concern:

Pursuant to the Freedom of Information Act, 5. U.S.C. Sections 552, *et seq*., we hereby request copies of:

1) All communications and documents, including memos, drafts, and comments on drafts, concerning the attached 2017 Settlement Agreement and Order on Consent for Certain Response Action Activities by Bona Fide Prospective Purchaser between the U.S. Environmental Protection Agency, Region 9 ("EPA") and Warmington Land Associates L.P. ("Warmington"), including but not limited to communications exchanged between:
    a. EPA and Warmington (and any representative thereof);
    b. EPA and its contractors;
    c. EPA and the City of Mountain View; and
    d. EPA and the Department of Justice.

2) All communications and documentation generated by EPA concerning environmental conditions or remediation on the property located at 277 Fairchild Drive, Mountain View, California, including any communications exchanged between:
    a. EPA and Warmington (and any representative thereof);
    b. EPA and its contractors; and
    c. EPA and the City of Mountain View.

3) All communications and documentation concerning or in response to the November 11, 2016 letter from J. Tom Boer, written on behalf of Schlumberger Technology Corporation and Raytheon Company, to EPA regarding proposed

removal action to address vapor intrusion at 277 Fairchild Drive, including any communications exchanged between:

a. EPA personnel internally; and
b. EPA and its contractors.

Please forward copies of these documents to me at Hunton Andrews Kurth LLP, 50 California, San Francisco, California 94111 or electronically by e-mail to jtboer@hunton.com. I agree to pay costs properly assessed in accordance with 5 U.S.C. § 552(a)(4)(A)(iv) in connection with this request. In the event fees exceed $250, please contact me for further authorization before incurring additional costs.

Please contact me by email or by telephone at (415) 975-3717 if you have any other questions regarding this request. Thank you for your assistance in this matter.

Sincerely,

J. Tom Boer

Enclosures: Settlement Agreement and Order on Consent for Certain Response Action Activities by Bona Fide Prospective Purchase (July 2017);
Letter from J. Tom Boer to EPA - Proposed Removal Action to Address Vapor Intrusion at 277 Fairchild Drive (November 11, 2016)

cc: James Colopy, Farella Braun + Martel

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 9

IN THE MATTER OF: MEW Superfund Study Area Warmington Fairchild Associates LLC	U.S. EPA Region 9 Docket No. 2017-01
PURSUANT TO THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT 42 U.S.C. §§ 9601 - 9675	SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR CERTAIN RESPONSE ACTION ACTIVITIES BY BONA FIDE PROSPECTIVE PURCHASER

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I. INTRODUCTION

1. This Settlement Agreement and Order on Consent for Certain Response Action Activities by Bona Fide Prospective Purchaser ("**Settlement Agreement**") is voluntarily entered into by and between the United States on behalf of the Environmental Protection Agency ("**EPA**") and Warmington Fairchild Associates LLC ("**Purchaser**") under the Comprehensive Environmental Response, Compensation, and Liability Act ("**CERCLA**"), 42 U.S.C. §§ 9601-9675. Under this Settlement Agreement, Purchaser agrees to perform certain activities as part of a response action at or in connection with the property located at 277 Fairchild Drive, 228 Evandale Avenue, and 236 Evandale Avenue, in Mountain View, California, specifically parcels 160-07-011, 160-07-012 and 160-07-013 (the "**Property**"), which is situated within the Middlefield-Ellis-Whisman ("**MEW**") Superfund Study Area ("**MEW Site**" or "**Site**").

II. JURISDICTION AND GENERAL PROVISIONS

2. This Settlement Agreement is issued pursuant to the authority vested in the President of the United States by Sections 101 - 175 of CERCLA, 42 U.S.C. §§ 9601 - 9675, and delegated to the Administrator of EPA by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, and further delegated to the undersigned Regional official, and the authority of the Attorney General to compromise and settle claims of the United States.

3. The Parties agree that the United States District Court for the Northern District of California will have jurisdiction pursuant to Section 113(b) of CERCLA, 42 U.S.C. § 9613(b), for any enforcement action brought with respect to this Settlement Agreement.

4. EPA has notified the State of California (the "**State**") of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

5. Purchaser represents that it is a bona fide prospective purchaser ("**BFPP**") as defined by Section 101(40) of CERCLA, 42 U.S.C. § 9601(40), that it has and will continue to comply with Section 101(40) during its ownership of the Property, and thus qualifies for the protection from liability under CERCLA set forth in Section 107(r)(1) of CERCLA, 42 U.S.C. § 9607(r)(1), with respect to the Property. In view, however, of the complex nature and significant extent of the Work to be performed in connection with the response activities at the Site, and the risk of claims under CERCLA being asserted against Purchaser notwithstanding Section 107(r)(1) as a consequence of Purchaser's activities at the Site pursuant to this Settlement Agreement, one of the purposes of this Settlement Agreement is to resolve, subject to the reservations and limitations contained in Section XIX (Reservations of Rights by United States), any potential liability of Purchaser under CERCLA for the Existing Contamination as defined by Paragraph 11 below.

6. The resolution of this potential liability, in exchange for Purchaser's performance of the Work and reimbursement of certain response costs is in the public interest.

7. EPA and Purchaser recognize that this Settlement Agreement has been negotiated in good faith. Purchaser agrees to comply with and be bound by the terms of this Settlement

Agreement and further agrees that it will not contest the basis or validity of this Settlement Agreement or its terms.

III. PARTIES BOUND

8. This Settlement Agreement applies to and is binding upon EPA and upon Purchaser and its successors and assigns. Any change in ownership or corporate status of Purchaser including, but not limited to, any transfer of assets or real or personal property shall not alter Purchaser's responsibilities under this Settlement Agreement.

9. Purchaser shall ensure that its contractors, subcontractors, and representatives comply with this Settlement Agreement, and, where appropriate, receive a copy of this Settlement Agreement. Purchaser shall be responsible for any noncompliance with this Settlement Agreement.

10. This Settlement Agreement and its appendices constitute the final, complete, and exclusive agreement and understanding among the Parties regarding the settlement embodied in the Settlement Agreement. The Parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Settlement Agreement.

IV. DEFINITIONS

11. Unless otherwise expressly provided herein, terms used in this Settlement Agreement that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations, including any amendments thereto.

"**BFPP**" shall mean a bona fide prospective purchaser as described in Section 101(40) of CERCLA, 42 U.S.C. § 9601(40).

"**CERCLA**" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675.

"**Day**" or "**day**" shall mean a calendar day. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next working day.

"**Effective Date**" shall mean the effective date of this Settlement Agreement as provided in Section XXVII.

"**EPA**" shall mean the United States Environmental Protection Agency and its successor departments, agencies, or instrumentalities.

"**EPA Hazardous Substance Superfund**" shall mean the Hazardous Substance Superfund established by the Internal Revenue Code, 26 U.S.C. § 9507.

"**Existing Contamination**" shall mean:

a. any hazardous substances, pollutants or contaminants present or existing on or under the Property as of the Effective Date;

b. any hazardous substances, pollutants or contaminants that migrated from the Property prior to the Effective Date; and

c. any hazardous substances, pollutants or contaminants presently at the Site that migrate onto or under or from the Property after the Effective Date.

"**Interest**" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year. Rates are available online at http://www.epa.gov/superfund/superfund-interest-rates.

"**National Contingency Plan**" or "**NCP**" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

"**OSC**" shall mean the On-Scene Coordinator as defined in 40 C.F.R. § 300.5.

"**Oversight Costs**" shall mean all direct and indirect costs incurred by EPA or the United States after the Effective Date in monitoring and supervising Purchaser's performance of the Work to determine whether such performance is consistent with the requirements of this Settlement Agreement, including costs incurred in reviewing plans, reports and other documents submitted pursuant to this Settlement Agreement, as well as costs incurred in overseeing implementation of the Work.

"**Paragraph**" shall mean a portion of this Settlement Agreement identified by an arabic numeral or an upper or lower case letter.

"**Parties**" shall mean EPA and Purchaser.

"**Property**" shall mean that portion of the Site, encompassing approximately 1.6 acres, specifically 277 Fairchild Drive, 228 Evandale Avenue, and 236 Evandale Avenue, in Mountain View, California, parcels 160-07-011, 160-07-012 and 160-07-013, as shown in Appendix 1 of this Settlement Agreement.

"**Purchaser**" shall mean Warmington Fairchild Associates, LLC and its successors and assigns.

"**Section**" shall mean a portion of this Settlement Agreement identified by a Roman numeral.

"**Settlement Agreement**" shall mean this Settlement Agreement and Order on Consent for Certain Response Action Activities by Bona Fide Prospective Purchaser and all

appendices attached hereto (listed in Section XXV). In the event of conflict between this Settlement Agreement and any appendix, this Settlement Agreement shall control.

"**RCRA**" shall mean the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992 (also known as the Resource Conservation and Recovery Act).

"**Response Action Plan**" shall mean the Work Plan prepared and submitted by Purchaser and approved by EPA on June 30, 2017. The Response Action Plan sets forth requirements for implementation of targeted response action activities as set forth in Appendix 3 to this Settlement Agreement and includes any modifications made in accordance with this Settlement Agreement.

"**RPM**" shall mean the Remedial Project Manager as defined in 40 C.F.R. §300.120.

"**Site**" shall mean the MEW Superfund Study Area Site located in Mountain View and Moffett Field, Santa Clara County, California, and depicted generally on the map attached as Appendix 2. The Site includes the Property and all areas to which hazardous substances and/or pollutants or contaminants have been deposited, stored, disposed of, placed, or otherwise come to be located. The Property is within both Operable Unit ("**OU**") 1 and OU3 of the MEW Site. OU1 includes MEW Site contamination being addressed by the remedies selected in the 1989 MEW Record of Decision ("**ROD**") and 2010 MEW ROD Amendment. OU3 includes MEW Site contamination generally to the west of the regional OU1 area that appears to have traveled to the OU3 area through sewer lines that leaked and MEW Site contaminants were subsequently released through cracks into the surrounding soils and groundwater. The full extent of OU3 contamination is currently being investigated.

"**MEW Site Special Account**" shall mean the special account, within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3).

"**Supervising Contractor**" shall mean the principal contractor retained by Purchaser to supervise and direct the implementation of the Work agreed to in this Settlement Agreement and to sign and approve the Final Report submitted concerning such Work.

"**United States**" shall mean the United States of America and each department, agency, and instrumentality of the United States, including EPA.

"**Waste Material**" shall mean (a) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (b) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (c) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and (4) any "hazardous material" under California Health and Safety Code § 25260.

"**Work**" shall mean all response activities Purchaser is required to perform under this Settlement Agreement.

V. FINDINGS OF FACT

12. This Agreement is entered into on the basis of the Findings of Fact set forth below.

a. The MEW Site is comprised of three National Priorities List ("**NPL**") sites – Fairchild Semiconductor Corp – Mountain View Superfund site; Raytheon Company Superfund site; and Intel Corp – Mountain View Superfund site, as well as portions of the former Naval Air Station (NAS) Moffett Field Superfund site. The MEW Site area was home to several manufacturing and industrial facilities, including semiconductor and other electronics manufacturing facilities and metal finishing facilities. While in operation, these former facilities required the storage, handling, and use of a variety of chemicals, including volatile organic compounds ("**VOCs**"). The primary chemical of concern at the MEW Site is the VOC trichloroethene ("**TCE**"). During operation of these facilities, some of the chemicals were released impacting soil and groundwater. In 1989, EPA signed a ROD to address Site soil and groundwater contamination both at several source facilities and throughout the regional groundwater plume. In 2010, EPA amended the 1989 ROD ("**2010 ROD Amendment**") selecting mitigation measures to address vapor intrusion into buildings overlying the Site's shallow groundwater contamination. The 1989 ROD and 2010 ROD Amendment are being implemented by the MEW Potentially Responsible Parties ("**PRPs**") under EPA oversight pursuant to a 1991 Consent Decree and 1990 Unilateral Administrative Order and amendments.

b. Beginning in 2012, additional groundwater sampling revealed TCE groundwater hotspot areas within and to the west of what had previously been depicted as the western boundary of the MEW TCE regional shallow groundwater contamination plume. These TCE "hotspots" of contamination were identified along Evandale Avenue, west of Whisman Road. The maximum TCE groundwater concentration of 130,000 micrograms per liter (μg/l) of TCE at 32 feet below ground surface (bgs) is in the street on Evandale Avenue adjacent to the southwestern boundary of the Property. The source of these TCE hotspot areas appear to have originated from where TCE that traveled through municipal sewer lines and leaked into the surrounding soil and groundwater and migrated in a north/northeasterly direction. The TCE hotspot area identified on Evandale Avenue closest to Whisman Road migrated in soil gas, soil, and groundwater over time onto and across the Property.

c. Since initial discovery of TCE hotspot areas on Evandale Avenue, EPA has been working with certain MEW PRPs, acting as the MEW Regional Groundwater Remediation Program ("**RGRP**"), to apply the Site remedy to address both groundwater contamination under the 1989 ROD and prevent vapor intrusion as specified in the 2010 ROD Amendment. The area of contamination emanating from the TCE hotspot areas is now referred to as MEW Site OU3.

d. While EPA and the MEW RGRP have been determining the placement of groundwater extraction wells to address the TCE groundwater contamination in this hotspot area, in 2016 EPA collected soil gas samples to further delineate soil gas contamination on the Property. July 2016 soil gas sample results indicated significantly higher TCE soil gas contamination in the shallow subsurface in multiple sample locations than expected. High TCE soil gas concentrations, defined as those areas exceeding 20,000 $\mu g/m^3$ of TCE, must be lowered

in order to be able to rely on the vapor intrusion control systems, designed by the MEW PRPs to be installed in the residences at the Property pursuant to the 2010 ROD Amendment.

e. Warmington Fairchild Associates, LLC is a Delaware Corporation registered in California as a foreign corporation. Warmington Fairchild Associates, LLC purchased the Property in 2015 with the intent to redevelop it with high-end homes. The Property had been occupied until August 2015 with a 25-unit motel, a convenience store, storage sheds, and 2 single-family residences. Following California Environmental Quality Act (CEQA) review, Warmington Fairchild Associates, LLC's project was approved by the City of Mountain View ("**City**") in the configuration shown in Appendix A. The project consists of 22 row homes, four single-family homes, and appurtenant utilities, parking, and landscaping. The layout of the development was finalized by the City as shown in Appendix A, which placed a number of homes overlying elevated soil gas contamination exceeding the TCE response action trigger level. In order to meet requirements of the City's approvals and Property loans, construction at the Property must begin by September 1, 2017. Warmington Fairchild Associates, LLC is interested in beginning construction of the new homes in a timely manner.

f. TCE groundwater concentrations in the immediate vicinity of the TCE source area on Evandale Avenue are high enough that soil gas concentrations in certain areas of the Property exceed the TCE response action level. Accordingly, there may be an imminent and substantial endangerment to residential occupants in overlying buildings even with the operation of vapor intrusion mitigation systems.

g. Response activities proposed to be conducted under this Settlement Agreement are to reduce high TCE shallow subsurface contaminant concentrations in soil gas to a depth of 10 feet and groundwater to a depth of 35 feet below ground surface. Lowering these shallow contaminant levels should reduce TCE source strength sufficiently for vapor intrusion potential to be reduced to levels that vapor intrusion mitigation measures on the Property will reliably prevent vapor intrusion into overlying buildings at concentrations posing a potential short-term health concern. It is expected that remedial activities consistent with these response action activities will continue to be undertaken by the MEW PRPs with EPA oversight.

h. Purchaser has prepared a Response Action Plan, dated June 30, 2017, a work plan to implement response action activities to lower TCE soil gas contaminant concentrations to reduce potential risks to human health from exposure to VOCs through the vapor intrusion pathway. The Response Action Plan is attached at Appendix 3 and provides specifically for soil vapor extraction and in-situ enhanced reductive dechlorination groundwater treatment of TCE in targeted "hot spot" areas on the Property.

i. Purchaser desires to maintain its BFPP protection notwithstanding its implementation of the Work. This Agreement is being entered into to provide liability protection to Purchaser for implementation of the Response Action Plan and any further response actions that Purchaser undertakes at the Property under EPA oversight, as well as to provide EPA with a mechanism for recovering its Oversight Costs as described herein.

VI. DETERMINATIONS

13. Based on the Findings of Fact set forth above, and the Administrative Record supporting this removal action, EPA has determined that:

a. The MEW Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

b. The contamination found at the Site, as identified in the Findings of Fact above, includes "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

c. Purchaser is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

d. The conditions described in the Findings of Fact above constitute an actual or threatened "release" of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

e. The Work is necessary to protect the public health, welfare, or the environment and, if carried out in compliance with the terms of this Settlement Agreement, will be considered consistent with the NCP, as provided in Section 300.700(c)(3)(ii) of the NCP.

VII. SETTLEMENT AGREEMENT

14. In consideration of and in exchange for the United States' Covenant Not to Sue in Section XVIII, Purchaser agrees to comply with all provisions of this Settlement Agreement, including, but not limited to, all attachments to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement.

VIII. WORK TO BE PERFORMED

15. Purchaser shall perform, at a minimum, all actions necessary to implement the work provided in the Response Action Plan attached as Appendix 3, in accordance with attached the Quality Assurance Project Plan ("**QAPP**"). The actions to be implemented generally include, but are not limited to, the following:

a. Active soil vapor extraction and monitoring targeting high TCE concentration "hot spot" areas exceeding 20,000 $\mu g/m^3$; and

b. In-situ enhanced reductive dechlorination groundwater treatment and monitoring targeting high TCE concentration "hot spot" areas exceeding 1,500 $\mu g/L$ TCE.

16. Purchaser shall perform all actions required by this Settlement Agreement in accordance with all applicable local, state, and federal laws and regulations, except as provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and 40 C.F.R. §§ 300.400(e) and 300.415(j). In accordance with 40 C.F.R. § 300.415(j), all on-Site actions required pursuant to

this Settlement Agreement shall, to the extent practicable, as determined by EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements ("**ARARs**") under federal environmental or State environmental or facility siting laws.

17. Work Plan and Implementation.

a. Within 14 days after the Effective Date, Purchaser shall submit to EPA for approval a draft schedule which shall provide a description of, and an expeditious schedule for the actions required by this Settlement Agreement and set forth in the Response Action Plan.

b. EPA has approved the Response Action Plan, attached as Appendix 3. If EPA requires revisions or modifications to the Response Action Plan, Purchaser shall submit a revised draft Response Action Plan within 7 days of receipt of EPA's notification of the required revisions. Purchaser shall implement the Response Action Plan as approved or modified in writing by EPA in accordance with the schedule approved by EPA. Once approved with modifications, or modified by EPA, the Work Plan, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Settlement Agreement.

c. Purchaser shall not commence any Work except in conformance with the terms of this Settlement Agreement.

18. Health and Safety Plan. Within 14 days after the Effective Date, Purchaser shall submit for EPA review and comment a plan that ensures the protection of the public health and safety during performance of on-Site work under this Settlement Agreement. This plan shall be prepared in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration (OSHA) regulations found at 29 C.F.R. Part 1910. If EPA determines that it is appropriate, the plan shall also include contingency planning. Purchaser shall incorporate all changes to the plan recommended by EPA and shall implement the plan during the pendency of the response action.

19. Quality Assurance and Sampling.

a. All sampling and analyses performed pursuant to this Settlement Agreement shall conform to EPA direction, approval, and guidance regarding sampling, quality assurance/quality control (QA/QC), data validation, and chain of custody procedures for all samples consistent with "EPA Requirements for Quality Assurance Project Plans (QA/R5)" EPA/240/B-01/003 (March 2001, reissued May 2006), "Guidance for Quality Assurance Project Plans (QA/G-5)" EPA/240R-02-009 (December 2002), and "Uniform Federal Policy for Quality Assurance Project Plans," Parts 1-3, EPA/505/B-04/900A-900C March 2005).

b. Purchaser shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with the appropriate EPA guidance. Purchaser shall follow, as appropriate, "Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures" (OSWER Directive No. 9360.4-01, April 1, 1990), as guidance for QA/QC and sampling. Purchaser shall only use laboratories that have a documented Quality System that complies with ASQ/ANSI E-4:2014,

"Quality Management Systems for Environmental Information and Technology Programs – Requirements with Guidance for Use" (American Society for Quality, February 2014), and "EPA Requirements for Quality Management Plans" (QA/R-2) (EPA/240/B-01/002, reissued May 2006), or equivalent documentation as determined by EPA. EPA may consider Environmental Response Laboratory Network (ERLN) laboratories, laboratories accredited under the National Environmental Laboratory Accreditation Program (NELAP), or laboratories that meet International Standardization Organization (ISO 17025) standards as meeting the Quality System requirements.

c. Upon request by EPA, Purchaser shall have a laboratory that meets the requirements of Paragraph 19.a above analyze samples submitted by EPA for QA monitoring. Purchaser shall provide to EPA the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis.

d. Upon request by EPA, Purchaser shall allow EPA or its authorized representatives to take split and/or duplicate samples. Purchaser shall notify EPA not less than 7 days in advance of any sample collection activity, unless shorter notice is agreed to by EPA. EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall allow Purchaser to take split or duplicate samples of any samples it takes as part of its oversight of Purchaser's implementation of the Work.

20. Reporting.

a. Purchaser shall submit a written progress report to EPA concerning actions undertaken pursuant to this Settlement Agreement every 10th day after the date of receipt of EPA's approval of the Work Plan and commencement of Work until completion of the Work, unless otherwise directed in writing by the RPM/OSC. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

b. Purchaser shall submit requested copies of all plans, reports or other submissions required by this Settlement Agreement or any approved work plan to EPA distribution list. Upon request by EPA, Purchaser shall submit such documents in electronic form to be specified by EPA.

21. Final Report. Within 60 days after completion of all Work required by this Settlement Agreement, Purchaser shall submit for EPA review and approval in accordance with Section XXVI (Notice of Completion) a final report summarizing the actions taken to comply with this Settlement Agreement. The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports." The final report shall include a statement of actual costs incurred in complying with the Settlement Agreement, a listing of quantities and types of materials removed off-Site or handled on-Site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation

generated during the removal action (e.g., manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by the Supervising Contractor who supervised or directed the preparation of said report:

> "Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

22. Off-Site Shipments.

a. Purchaser may ship hazardous substances, pollutants and contaminants from the Site to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Purchaser will be deemed to be in compliance with CERCLA Section 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Purchaser obtains a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b). Purchaser may ship Investigation Derived Waste from the Site to an off-Site facility only if Purchaser complies with EPA's "Guide to Management of Investigation Derived Waste," OSWER 9345.3-03FS (Jan. 1992).

b. Purchaser may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, it provides written notice to the appropriate state environmental official in the receiving facility's state and to the RPM/OSC. This written notice requirement shall not apply to any off-Site shipments when the total quantity of all such shipments will not exceed ten cubic yards. The written notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Purchaser also shall notify the state environmental official referenced above and the RPM/OSC of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Purchaser shall provide the written notice after the award of the contract for the response action and before the Waste Material is shipped.

IX. AUTHORITY OF THE REMEDIAL PROJECT MANAGER AND ON-SCENE COORDINATOR

23. The RPM/OSC shall be responsible for overseeing Purchaser's implementation of this Settlement Agreement. The RPM/OSC shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Settlement Agreement, or to direct any other removal action undertaken at the Site. Absence of the RPM/ OSC from the Property shall not be cause for stoppage of work unless specifically directed by the RPM/OSC.

X. PAYMENT OF OVERSIGHT COSTS

24. Payment of Oversight Costs Upon Receipt of Periodic Bills.

a. Purchaser shall pay EPA all Oversight Costs not inconsistent with the NCP. On a periodic basis, EPA will send Purchaser a bill requiring payment that includes a SCORPIOS cost summary. Purchaser shall make all payments required by this Paragraph to EPA by Fedwire Electronic Funds ("**EFT**") Transfer to:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT address = FRNYUS33
33 Liberty Street
New York, NY 10045
Field Tag 4200 of the Fedwire message should read
"D 68010727 Environmental Protection Agency"

and shall reference Site/Spill ID Number 09M6 and the EPA docket number for this action.

For Automated Clearinghouse ("**ACH**") payment:

Payment by Purchaser shall be made to EPA by ACH to:

US Treasury REX/Cashlink ACH Receiver
ABA: 051036706
Account Number: 310006, Environmental Protection Agency
CTS Format Transaction Code 22 - checking
5700 Rivertech Court
Riverdale, Maryland 20737
1 (800) 327-0147

and shall reference Site/Spill ID Number 09M6 and the EPA docket number for this action.

For online payment:

Payment shall be made at https://www.pay.gov to the EPA account in accordance with instructions to be provided to Purchaser by EPA.

Payment shall be made by official bank check made payable to "EPA Hazardous Substance Superfund." Each check, or a letter accompanying each check, shall identify the name and address of the party making payment, the Site name, Site/Spill ID Number 09M6, and the EPA docket number for this action, and shall be sent to:

U.S. Environmental Protection Agency
Superfund Payments
Cincinnati Finance Center
PO Box 979076
St. Louis, MO 63197-9000

b. In the event that a payment for Oversight Costs is not made within 30 days of Purchaser's receipt of a bill, Purchaser shall pay Interest on the unpaid balance. Interest shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment.

c. The total amount to be paid by Purchaser pursuant to Paragraph 24 may be deposited by EPA in the MEW Site Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

25. At the time of each payment, Purchaser shall provide notice that such payment has been made to Alana Lee at lee.alana@epa.gov, and to the EPA Cincinnati Finance Office by email at cinwd_acctsreceivable@epa.gov, or by mail to:

EPA Cincinnati Finance Office
26 W. Martin Luther King Drive
Cincinnati, Ohio 45268

Such notice shall reference Site/Spill ID Number 09M6 and the EPA docket number for this action.

26. Pursuant to Section XIII (Dispute Resolution), Purchaser may dispute all or part of a bill for Oversight Costs if Purchaser determines that EPA has made a mathematical error or included a cost item that is outside the definition of Oversight Costs, or if Purchaser believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. If any dispute over costs is resolved before payment is due, the amount due will be adjusted as necessary. If the dispute is not resolved before payment is due, Purchaser shall pay the full amount of the uncontested costs to EPA as specified in Paragraph 24.a on or before the due date. Within the same time period, Purchaser shall pay the full amount of the contested costs into an interest-bearing escrow account in a duly chartered bank or trust company that is insured by the Federal Deposit Insurance Corporation. Purchaser shall simultaneously transmit a copy of both checks to the persons listed in Paragraph 25. Purchaser shall ensure that the prevailing party in the dispute receives the amount upon which it prevailed from the escrow funds plus any interest accrued within 20 calendar days after the dispute is resolved.

XI. ACCESS/NOTICE TO SUCCESSORS/INSTITUTIONAL CONTROLS

27. Purchaser agrees to provide EPA, its authorized officers, employees, representatives, and all other persons performing response actions under EPA oversight, an irrevocable right of access at all reasonable times to the Property and to any other property owned or controlled by Purchaser to which access is required for the implementation of response actions at the Property. EPA agrees to provide reasonable notice to Purchaser of the timing of response actions to be undertaken at the Property and other areas owned or controlled by Purchaser. Notwithstanding any provision of this Settlement Agreement, EPA retains all of its access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and other authorities.

28. Purchaser has entered into an Environmental Access Agreement, an agreement for an environmental restriction under California Civil Code section 1471, with the MEW PRPs that was recorded with the Santa Clara County Recorders Office, Santa Clara County, California, in August, 2015. The Environmental Access Agreement provides notice to all successors-in-title that the Property is part of the Site and requires access to conduct Site response activities at the Property.

29. Purchaser shall implement and comply with any land use restrictions and institutional controls on the Property in connection with a response action.

30. For so long as Purchaser is an owner or operator of the Property, Purchaser shall require that assignees, successors in interest, and any lessees, sublessees and other parties with rights to use the Property shall provide access and cooperation to EPA, its authorized officers, employees, representatives, and all other persons performing response actions under EPA oversight. Purchaser shall require that assignees, successors in interest, and any lessees, sublessees, and other parties with rights to use the Property implement and comply with any land use restrictions and institutional controls on the Property in connection with a response action, and not contest EPA's authority to enforce any land use restrictions and institutional controls on the Property.

31. Upon sale or other conveyance of the Property or any part thereof, Purchaser shall require that each grantee, transferee or other holder of an interest in the Property or any part thereof shall provide access and cooperation to EPA, its authorized officers, employees, representatives, and all other persons performing response actions under EPA oversight. Purchaser shall require that each grantee, transferee or other holder of an interest in the Property or any part thereof shall implement and comply with any land use restrictions and institutional controls on the Property in connection with a response action and not contest EPA's authority to enforce any land use restrictions and institutional controls on the Property.

32. Purchaser shall provide a copy of this Settlement Agreement to any current lessee, sublessee, and other party with rights to use the Property as of the Effective Date.

XII. RECORD RETENTION, DOCUMENTATION, AND AVAILABILITY OF INFORMATION

33. Purchaser shall preserve all documents and information relating to the Work, or relating to the hazardous substances, pollutants or contaminants found on or released from the Site, and shall submit them to EPA upon completion of the Work required by this Settlement Agreement, or earlier if requested by EPA.

34. Purchaser may assert a business confidentiality claim pursuant to 40 C.F.R. § 2.203(b) with respect to part or all of any information submitted to EPA pursuant to this Settlement Agreement, provided such claim is allowed by Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7). Analytical and other data specified in Section 104(e)(7)(F) of CERCLA shall not be claimed as privileged or confidential by Purchaser. EPA shall disclose information covered by a business confidentiality claim only to the extent permitted by, and by means of the procedures set forth at, 40 C.F.R. Part 2 Subpart B. If no such claim accompanies the information when it is received by EPA, EPA may make it available to the public without further notice to Purchaser.

XIII. DISPUTE RESOLUTION

35. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. EPA and Purchaser shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally. If EPA contends that Purchaser is in violation of this Settlement Agreement, EPA shall notify Purchaser in writing, setting forth the basis for its position. Purchaser may dispute EPA's position pursuant to Paragraph 36.

36. If Purchaser disputes EPA's position with respect to Purchaser's compliance with this Settlement Agreement or objects to any EPA action taken pursuant to this Settlement Agreement, including billings for Oversight Costs, Purchaser shall notify EPA in writing of its position unless the dispute has been resolved informally. EPA may reply, in writing, to Purchaser's position within 30 days of receipt of Purchaser's notice. EPA and Purchaser shall have 45 days from EPA's receipt of Purchaser's written statement of position to resolve the dispute through formal negotiations (the "**Negotiation Period**"). The Negotiation Period may be extended at the sole discretion of EPA. Such extension may be granted orally but must be confirmed in writing.

37. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by both Parties, be incorporated into and become an enforceable part of this Settlement Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, an EPA management official at the Assistant Director level or higher will review the dispute on the basis of the parties' written statements of position and issue a written decision on the dispute to Purchaser. EPA's decision shall be incorporated into and become an enforceable part of this Settlement Agreement. Purchaser's obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Purchaser shall fulfill the requirement that

was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs.

XIV. FORCE MAJEURE

38. Purchaser agrees to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a force majeure. For purposes of this Settlement Agreement, a force majeure is defined as any event arising from causes beyond the control of Purchaser, or of any entity controlled by Purchaser, including but not limited to its contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Purchaser's best efforts to fulfill the obligation. Force majeure does not include financial inability to complete the Work, or increased cost of performance, or a failure to attain performance standards/action levels set forth in the Response Action Plan.

39. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a force majeure event, Purchaser shall notify EPA orally within two (2) days of when Purchaser first knew that the event might cause a delay. Within three (3) days thereafter, Purchaser shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Purchaser's rationale for attributing such delay to a force majeure event if it intends to assert such a claim; and a statement as to whether, in the opinion of Purchaser, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall preclude Purchaser from asserting any claim of *force majeure* for that event for the period of time of such failure to comply and for any additional delay caused by such failure.

40. If EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the force majeure event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify Purchaser in writing of its decision. If EPA agrees that the delay is attributable to a force majeure event, EPA will notify Purchaser in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

41. If Purchaser elects to invoke the dispute resolution procedures set forth in Section XIII (Dispute Resolution), Purchaser shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, Purchaser shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Purchaser complied with the requirements of Paragraphs 39 and 40

above. If Purchaser carries this burden, the delay at issue shall be deemed not to be a violation by Purchaser of the affected obligation of this Settlement Agreement.

XV. STIPULATED PENALTIES

42. Purchaser shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 43 and 44 for failure to comply with the requirements of this Settlement Agreement specified below, unless excused under Section XIV (*Force Majeure*). "Compliance" by Purchaser shall include completion of the activities under this Settlement Agreement or any work plan or other plan approved under this Settlement Agreement identified below in accordance with all applicable requirements of law, this Settlement Agreement, the Response Action Plan, and any plans or other documents approved by EPA pursuant to this Settlement Agreement and within the specified time schedules established by and approved under this Settlement Agreement.

43. Stipulated Penalty Amounts – Work, including Payments. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Paragraph 43.b or per violation per day for failure to submit timely or adequate reports or other written documents pursuant to Paragraphs 20 and 21:

a.

Penalty Per Violation Per Day	Period of Noncompliance
$250	1st through 14th day
$600	15th through 30th day
$1,500	31st day and beyond

b. Compliance Milestones

(1) Final Response Action Plan;

(2) Pre-Construction Meeting;

(3) In-situ Enhanced Reductive Dechlorination Injections and Monitoring;

(4) Soil Vapor Extraction Operation, Treatment, and Monitoring;

(5) Establishment of Project Website;

(6) Project Website Updates;

(7) Community Outreach Activities; and

(8) Response Action Completion Report

44. Stipulated Penalty Amounts - Reports. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports or other written documents pursuant to Paragraphs 20 and 21:

Penalty Per Violation Per Day	Period of Noncompliance
$125	1st through 14th day
$250	15th through 30th day
$500	31st day and beyond

45. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 60 (Work Takeover), Purchaser shall be liable for a stipulated penalty in the amount of $150,000.

46. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: 1) with respect to a deficient submission under Section VIII (Work to be Performed), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Purchaser of any deficiency; and 2) with respect to a decision by the EPA Management Official at the Assistant Director level or higher, under Paragraph 37 of Section XIII (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the EPA management official issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

47. Following EPA's determination that Purchaser has failed to comply with a requirement of this Settlement Agreement, EPA may give Purchaser written notification of the failure and describe the noncompliance. EPA may send Purchaser a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Purchaser of a violation.

48. All penalties accruing under this Section shall be due and payable to EPA within 30 days of Purchaser's receipt from EPA of a demand for payment of the penalties, unless Purchaser invokes the dispute resolution procedures under Section XIII (Dispute Resolution). Purchaser shall make all payments required by this Paragraph to EPA by Fedwire EFT to:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT address = FRNYUS33
33 Liberty Street
New York, NY 10045
Field Tag 4200 of the Fedwire message should read
"D 68010727 Environmental Protection Agency"

and shall reference stipulated penalties, Site/Spill ID Number 09M6 and the EPA docket number for this action.

49. The payment of penalties shall not alter in any way Purchaser's obligation to complete performance of the Work required under this Settlement Agreement.

50. Penalties shall continue to accrue during any dispute resolution period, except as provided in Paragraph 46 above, but need not be paid until 15 days after the dispute is resolved by agreement or by receipt of EPA's decision.

51. If Purchaser fails to pay stipulated penalties when due, EPA may institute proceedings to collect the penalties, as well as Interest. Purchaser shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 47. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Purchaser's violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 106(b) of CERCLA, 42 U.S.C. § 9606(b), provided, however, that EPA shall not seek civil penalties pursuant to Section 106(b) for any violation for which a stipulated penalty is provided herein, except in the case of a willful violation of this Settlement Agreement. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

XVI. FINANCIAL RESPONSIBILITY

52. The Parties agree and acknowledge that, in the event Purchaser ceases implementation of or otherwise fails to complete the Work in accordance with this Settlement Agreement, Purchaser shall ensure that EPA is held harmless from or reimbursed for all costs required for completion of the Work. For these purposes, Purchaser shall establish and maintain Financial Responsibility for the benefit of EPA in the amount of $500,000 (hereinafter "Estimated Cost of the Work") in one or more of the following forms, each of which must be satisfactory in form and substance to EPA:

a. A surety bond unconditionally guaranteeing payment and/or performance of Work;

b. One or more irrevocable letters of credit, payable to or at the direction of EPA;

c. A trust fund established for the benefit of EPA;

d. A policy of insurance that provides EPA with acceptable rights as a beneficiary;

e. A demonstration by Purchaser that it meets the financial test criteria of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work, provided that all other requirements of 40 C.F.R. § 264.143(f) are satisfied; or

A written guarantee to fund or perform the Work executed in favor of EPA by one or more of the following: (i) a direct or indirect parent company of Purchaser, or (ii) a company that has a "substantial business relationship" (as defined in 40 C.F.R. § 264.141(h)) with Purchaser;

provided, however, that any company providing such a guarantee must demonstrate to the satisfaction of EPA that it satisfies the financial test requirements of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work that it proposes to guarantee hereunder. Within 10 days after the Effective Date of this Settlement Agreement, Purchaser shall submit all executed documents required in order to make the selected Financial Responsibility mechanism legally binding.

53. The commencement of any Work Takeover pursuant to Paragraph 60 of this Settlement Agreement (Work Takeover) shall trigger EPA's right to receive the benefit of any Financial Responsibility mechanism(s) provided pursuant to Paragraph 52.a, 52.b, 52.c, 52.d, or 52.e, and at such time EPA shall have immediate access to resources guaranteed under any such Financial Responsibility mechanism(s), whether in cash or in kind, as needed to complete the Work. In the event that the Financial Responsibility mechanism involves a demonstration of satisfaction of the financial test criteria pursuant to Paragraph 52.e, then, after the commencement by EPA of any Work Takeover pursuant to Paragraph 60 of this Settlement Agreement (Work Takeover), Purchaser shall immediately upon written demand from EPA deposit into an account specified by EPA a cash amount up to but not exceeding the Estimated Cost of the Work as of such date, as determined by EPA and notified to Purchaser.

54. If Purchaser desires to reduce the amount of any Financial Responsibility mechanism(s), change the form or terms of any Financial Responsibility mechanism(s), or release, cancel or discontinue any Financial Responsibility mechanism(s) because the Work has been fully and finally completed in accordance with this Settlement Agreement, Purchaser shall make this request to EPA in writing and EPA shall either approve or disapprove the request in writing.

XVII. CERTIFICATION

55. By entering into this Settlement Agreement, Purchaser certifies that to the best of its knowledge and belief it has fully and accurately disclosed to EPA all information known to Purchaser and all information in the possession or control of its officers, directors, employees, contractors and agents which relates in any way to any Existing Contamination or any past or potential future release of hazardous substances, pollutants or contaminants at or from the Site and to its qualification for this Settlement Agreement. Purchaser also certifies that to the best of its knowledge and belief it has not caused or contributed to a release or threat of release of hazardous substances or pollutants or contaminants at the Site. If the United States determines that information provided by Purchaser is not materially accurate and complete, the Settlement Agreement, within the sole discretion of EPA, shall be null and void and EPA reserves all rights it may have.

XVIII. COVENANT NOT TO SUE BY UNITED STATES

56. In consideration of the actions that will be performed and the payments that will be made by Purchaser under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, the United States covenants not to sue or to take administrative action against Purchaser pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for Existing Contamination. This covenant not to sue shall take

effect upon the Effective Date and is conditioned upon the complete and satisfactory performance by Purchaser of all obligations under this Settlement Agreement, including, but not limited to, payment of Oversight Costs, pursuant to Section X. This covenant not to sue extends only to Purchaser and does not extend to any other person**.**

XIX. RESERVATION OF RIGHTS BY UNITED STATES

57. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent EPA or the United States from seeking legal or equitable relief to enforce the terms of this Settlement Agreement, from taking other legal or equitable action as it deems appropriate and necessary.

58. The covenant not to sue set forth in Section XIX above does not pertain to any matters other than those expressly identified therein. The United States reserves, and this Settlement Agreement is without prejudice to, all rights against Purchaser with respect to all other matters, including, but not limited to:

a. liability for failure by Purchaser to meet a requirement of this Settlement Agreement;

b. criminal liability;

c. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

d. liability for violations of federal, state, or local law or regulations during or after implementation of the Work other than as provided in the Workplan, the Work, or otherwise ordered by EPA;

e. liability resulting from the release or threat of release of hazardous substances, pollutants or contaminants at or in connection with the Site after the Effective Date, not within the definition of Existing Contamination;

f. liability resulting from exacerbation of Existing Contamination by Purchaser, lessees or sublessees; and

g. liability arising from the disposal, release or threat of release of Waste Materials outside of the Site.

59. With respect to any claim or cause of action asserted by the United States, Purchaser shall bear the burden of proving that the claim or cause of action, or any part thereof, is attributable solely to Existing Contamination and that Purchaser has complied with all of the requirements of 42 U.S.C. § 9601(40).

60. Work Takeover. In the event EPA determines that Purchaser has ceased implementation of any portion of the Work, is seriously or repeatedly deficient or late in its performance of the Work, or is implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portion of the Work as EPA determines necessary. Prior to taking over the Work, EPA will issue written notice to Purchaser specifying the grounds upon which such notice was issued and providing Purchaser with 14 days within which to remedy the circumstances giving rise to EPA's issuance of the notice. Purchaser may invoke the procedures set forth in Section XIII (Dispute Resolution) to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. After commencement and for the duration of any Work Takeover, EPA shall have immediate access to and benefit of any Financial Responsibility mechanism provided pursuant to Section XVI (Financial Responsibility) of this Settlement Agreement. Notwithstanding any other provision of this Settlement Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

XX. COVENANT NOT TO SUE BY PURCHASER

61. Purchaser covenants not to sue and agrees not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to Existing Contamination, the Work, Oversight Costs, or this Settlement Agreement, including, but not limited to:

a. any direct or indirect claim for reimbursement from the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

b. any claim arising out of response actions, including any claim under the United States Constitution, the California State Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, or at common law; or

c. any claim pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, Section 7002(a) of RCRA, 42 U.S.C. § 6972(a), or State law.

62. Purchaser reserves, and this Settlement Agreement is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, and brought pursuant to any statute other than CERCLA or RCRA and for which the waiver of sovereign immunity is found in a statute other than CERCLA or RCRA, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States, as that term is defined in 28 U.S.C. § 2671, while acting within the scope of his or her office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, the foregoing shall not include any claim based on EPA's selection of response actions, or the oversight or approval of Purchaser's plans, reports, other deliverables, or activities.

63. Nothing in this Settlement Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

XXI. EFFECT OF SETTLEMENT/CONTRIBUTION

64. Nothing in this Settlement Agreement precludes the United States or Purchaser from asserting any claims, causes of action, or demands for indemnification, contribution, or cost recovery against any person not a party to this Settlement Agreement, including any claim Purchaser may have pursuant to Section 107(a)(4)(B). Nothing herein diminishes the right of the United States, pursuant to Sections 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2) and (3), to pursue any such persons to obtain additional response costs or response actions and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

65. In the event of a suit or claim for contribution brought against Purchaser, notwithstanding the provisions of Section 107(r)(1) of CERCLA, 42 U.S.C. § 9607(r)(1), with respect to Existing Contamination (including any claim based on the contention that Purchaser is not a BFPP, or has lost its status as a BFPP as a result of response actions taken in compliance with this Settlement Agreement or at the direction of the OSC), the Parties agree that this Settlement Agreement shall then constitute an administrative settlement pursuant to which Purchaser has, as of the Effective Date, resolved liability to the United States within the meaning of Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C.§§ 9613(f)(2) and 9622(h)(4), and is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, or as may be otherwise provided by law, for the "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are all response actions taken or to be taken and all response costs incurred or to be incurred by the United States or by any other person with respect to Existing Contamination.

66. In the event Purchaser were found, in connection with any action or claim it may assert to recover costs incurred or to be incurred with respect to Existing Contamination, not to be a BFPP, or to have lost its status as a BFPP as a result of response actions taken in compliance with this Settlement Agreement or at the direction of the RPM/OSC, the Parties agree that this Settlement Agreement shall then constitute an administrative settlement pursuant to which Purchaser has, as of the Effective Date, resolved liability to the United States within the meaning of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B).

67. Purchaser agrees that with respect to any suit or claim brought by it for matters related to this Settlement Agreement it will notify the United States in writing no later than 60 days prior to the initiation of such suit or claim.

68. Purchaser also agrees that with respect to any suit or claim for contribution brought against it for matters related to this Settlement Agreement it will notify the United States in writing within 10 days of service of the complaint on it. In addition, Purchaser agrees that it will notify the United States within 10 days of service or receipt of any Motion for Summary Judgment and within 10 days of receipt of any order from a court setting a case for trial, for matters related to this Settlement Agreement.

XXII. RELEASE AND WAIVER OF LIEN(S)

69. Subject to the Reservation of Rights in Section XIX of this Settlement Agreement, upon satisfactory completion of the Work specified in Section VIII (Work to be Performed) and payment of Oversight Costs due under Section X, EPA agrees to release and waive any lien it may have on the Property now and in the future under Section 107(r) of CERCLA, 42 U.S.C.§ 9607(r), for costs incurred or to be incurred by EPA in responding to the release or threat of release of Existing Contamination.

XXIII. INDEMNIFICATION

70. Purchaser shall indemnify, save, and hold harmless the United States, its officials, agents, contractors, subcontractors, employees, and representatives from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Purchaser, its officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Purchaser agrees to pay the United States all costs incurred by the United States, including but not limited to attorneys' fees and other expenses of litigation, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Purchaser, Purchaser's officers, directors, employees, agents, contractors, subcontractors, and any persons acting on Purchaser's behalf or under Purchaser's control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Purchaser in carrying out activities pursuant to this Settlement Agreement. Neither Purchaser nor any such contractor shall be considered an agent of the United States.

71. The United States shall give Purchaser notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Purchaser prior to settling such claim.

72. Purchaser waives all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between Purchaser and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Purchaser shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Purchaser and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

XXIV. MODIFICATION

73. The RPM or OSC may make minor modifications to any plan or schedule or the Response Action Plan in writing or by oral direction. Any oral modification will be memorialized in writing by EPA promptly, but shall have as its effective date the date of the RPM's or OSC's oral direction. Any other requirements of this Settlement Agreement may be modified in writing by mutual agreement of the Parties.

74. If Purchaser seeks permission to deviate from any approved work plan or schedule, Purchaser's Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis. Purchaser may not proceed with the requested deviation until receiving oral or written approval from the RPM/OSC.

75. No informal advice, guidance, suggestion, or comment by the RPM/OSC or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Purchaser shall relieve Purchaser of its obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

XXV. APPENDICES

76. The following appendices are attached to and incorporated into this Settlement Agreement.

a. Appendix 1 shall mean the attached Property description and map.

b. Appendix 2 shall mean the attached map of the MEW Site.

c. Appendix 3 shall mean the attached Response Action Plan.

XXVI. NOTICE OF COMPLETION

77. When EPA determines, after EPA's review of the Final Response Action Completion Report, that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including continued compliance with CERCLA Section 101(40), post-removal Site controls, record retention, and compliance with institutional controls, EPA will provide written notice to Purchaser. If EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Purchaser, provide a list of the deficiencies, and require that Purchaser modify the Work Plan if appropriate in order to correct such deficiencies. Purchaser shall implement the modified and approved Work Plan and shall submit a modified Final Report in accordance with the EPA notice. Failure by Purchaser to implement the approved modified Work Plan shall be a violation of this Settlement Agreement.

XXVII. EFFECTIVE DATE

78. The effective date of this Settlement Agreement shall be the date upon which EPA issues written notice to Purchaser that EPA has fully executed the Settlement Agreement after review of and response to any public comments received.

XXVIII. DISCLAIMER

79. This Settlement Agreement in no way constitutes a finding by EPA as to the risks to human health and the environment which may be posed by contamination at the Property or the Site nor constitutes any representation by EPA that the Property or the Site is fit for any particular purpose.

XXIX. PAYMENT OF COSTS

80. If Purchaser fails to comply with the terms of this Settlement Agreement, it shall be liable for all litigation and other enforcement costs incurred by the United States to enforce this Settlement Agreement or otherwise obtain compliance.

XXX. NOTICES AND SUBMISSIONS

81. Any notices, documents, information, reports, plans, approvals, disapprovals, or other correspondence required to be submitted from one party to another under this Settlement Agreement, shall be deemed submitted either when hand-delivered or as of the date of receipt by certified mail/return receipt requested, express mail, or facsimile. Electronic submissions are acceptable where indicated in the Work Plan and shall be deemed submitted when received by the recipient below.

Submissions to Purchaser shall be addressed to:

Warmington Fairchild LLC
David Agee
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San Ramon, CA 94583
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Submissions to U.S. EPA shall be addressed to:

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75 Hawthorne Street, SFD-7-3
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Email: Lee.Alana@epa.gov

With copies to:

Bethany Dreyfus
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75 Hawthorne Street, ORC-3
San Francisco, California 94105
Telephone: 415-972-3886
Email: Dreyfus.Bethany@epa.gov

XXXI. PUBLIC COMMENT

82. This Settlement Agreement shall be subject to a thirty-day public comment period, after which EPA may modify or withdraw its consent to this Settlement Agreement if comments received disclose facts or considerations which indicate that this Settlement Agreement is inappropriate, improper or inadequate.

The undersigned representative of Purchaser certifies that it is fully authorized to enter into the terms and conditions of this Settlement Agreement and to bind the party it represents to this document.

IT IS SO AGREED:
BY:

[Name] Date
WARMINGTON FAIRCHILD ASSOCIATES, LLC,
a Delaware limited liability company

BY:

[Name] Date
WRG BUILDER II, L.P.
a California limited partnership, its managing member

BY:

7-3-17

[Name] Ryan Gerding Date
WARMINGTON RESIDENTIAL CALIFORNIA, INC.
a California corporation, its general partner

IT IS SO AGREED:
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

BY:

7/13/17

Richard Hiett
Acting Assistant Director
Region IX Superfund Division

Date

IT IS SO AGREED:
UNITED STATES DEPARTMENT OF JUSTICE

BY:

7/27/17

Deputy Section Chief
Environmental Enforcement Section
U.S. Department of Justice

Date

HUNTON & WILLIAMS

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November 11, 2016

Via E-Mail

Alana Lee, Project Manager
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Re: Proposed Removal Action to Address Vapor Intrusion at 277 Fairchild Drive, Mountain View, California

Dear Ms. Lee and Ms. Dreyfus:

I write on behalf of Schlumberger Technology Corporation ("STC") and Raytheon Company ("Raytheon") with regard to mitigation of potential future vapor intrusion ("VI") at 277 Fairchild Drive, Mountain View, California (the "Property") within the Middlefield-Ellis-Whisman Superfund Study Area ("MEW Site").

As you are aware, Schlumberger and Raytheon (collectively, for the purpose of this letter, the "MEW Companies") have worked extensively with the U.S. Environmental Protection Agency ("EPA") to develop and implement protective measures to address short- and long-term risk from potential VI at and in the vicinity of the MEW Site. This has included a supplemental investigation at the MEW Site into VI issues and risks, preparing a feasibility study to evaluate options to reduce risk from VI in current and future structures, cooperating in the development of the Record of Decision amendment for the Vapor Intrusion Pathway ("VI ROD") that was adopted by EPA in 2010, and implementing the VI ROD including installation of VI mitigation systems at multiple structures at the MEW Site. The MEW Companies remain committed to implementing mitigation measures necessary to protect current and future building occupants, consistent with good science and established risk assessment protocols.

This letter, and the accompanying memorandum from Geosyntec, provide several legal and technical concerns about EPA's potential plan to proceed with a removal action at the Property in addition to the VI remedy specified in the VI ROD, including: (i) available

evidence indicates that engineered remedies are protective for VI at the MEW Site and at this particular Property; (ii) there is no reasonable basis to find an imminent and substantial endangerment at the Property; (iii) if it can even meet EPA's performance objectives at all, the potential removal action will not be accomplished in a reasonable period of time and is therefore unnecessary and duplicative without providing increased protectiveness; (iv) to the extent EPA has concerns about protectiveness at the Property, there are additional engineered remedies that could be considered that would be more effective than the proposed removal action; and (v) in taking any action, EPA must act consistent with its own regulations and guidance and avoid a course that is arbitrary and capricious or otherwise not in accord with the law.

The VI ROD already specifies the appropriate remedy for this Property because the very purpose of the VI ROD was to "address the vapor intrusion pathway and ensure protection of human health of building occupants in the Vapor Intrusion Study Area." VI ROD at 2. These remedies "address[ed] the vapor intrusion pathway by preventing subsurface contaminants from migrating into indoor air or accumulating in enclosed building spaces." *Id.* at 12. The VI ROD specifically contemplated the future construction of residential structures and concluded that the selected remedy – an active sub-slab/sub-membrane ventilation system – "is acceptable because of its high rating in long-term effectiveness." *Id.* at 38. The MEW Companies have supported the remedy in the VI ROD and worked cooperatively with EPA to construct the engineered mitigation systems identified by EPA as an appropriate and protective remedy to address potential VI at the MEW Site.

As you are aware, the Property has been subject to redevelopment plans since 2014 when Warmington Residential notified EPA of its intent to build a residential housing complex. The MEW Companies cooperated with EPA and the builder as the redevelopment plan proceeded through planning, design, and permitting. Consistent with the remedy selected by the VI ROD, the MEW Companies planned for and were prepared to construct an active sub-slab depressurization system under the anticipated housing complex at the Property. Over one and a half years ago, EPA approved the design for that system in a letter dated April 22, 2015.

On October 6, 2016, EPA communicated its newly formed belief that an engineered remedy at the Property may be insufficient, despite the years of planning associated with the redevelopment. More specifically, EPA indicated its belief that: (a) current mitigation options prescribed by the VI ROD may be insufficiently protective of human health for the proposed redevelopment at the Property; and (b) a time-critical removal action is therefore warranted to target chlorinated solvents in on-site soil, soil gas, and groundwater.

On October 14, 2016, STC and Raytheon had their consultant, Geosyntec, meet with EPA to further discuss the technical basis for EPA's position. For the reasons described in this letter and the accompanying Technical Memorandum from Geosyntec, STC and Raytheon disagree that VI mitigation at the Property, beyond the mitigation mandated by the VI ROD, will provide increased protection for human health or that such additional work is cost-effective or practicable. EPA's recent plan may undermine confidence in the protectiveness of the engineered remedy selected in the VI ROD – which was thoroughly researched, vetted, and finalized following public comment and thorough scientific scrutiny via EPA's administrative processes – without any concomitant increase in protectiveness.

(a) The Engineered Remedy Selected by the VI ROD Will Protect Human Health

Over a period of many years, substantial resources, data, analysis, public input, and time have been devoted to studying and addressing VI throughout the MEW Site. A Remedial Investigation/Feasibility Study, Proposed Plan, the VI ROD, and a Statement of Work were all prepared to that end, with EPA ultimately selecting an engineered remedy as protective of human health and welfare. VI ROD at 2.

EPA now questions whether an engineered mitigation system is adequate. EPA appears to rely upon a back-of-the-envelope, generalized evaluation of risk, including speculative conjecture that a passive VI mitigation system might only reduce the risk for VI by a factor of 10x, while an active system might only be counted on to reduce risk by a factor of 100x. EPA has not provided any written analysis or scientific justification for these factors.

Nothing in the VI ROD, or the administrative record supporting the remedy selection process for VI, supports the conclusion that the selected remedy at the MEW Site is protective only to the extent that it reduces risk by a factor of 100x or that there is an upper bound of soil vapor or groundwater concentrations above which the remedy will fail. In fact, the VI ROD states that the selected remedy "utilizes permanent solutions to the maximum extent practicable" and was "designed to prevent exposure" to any contaminants at the site. VI ROD at 2. Proper installation of an engineered remedy consistent with the VI ROD will eliminate any pathway of exposure for VI. At this point, there is a successful track-record at the MEW Site (and other sites nationwide) demonstrating that engineered remedies eliminate exposure pathways and protect human health.

It would be inconsistent with the VI ROD, and arbitrary and capricious, to conclude that an engineered remedy is inadequate to protect human health at the Property, unless the

EPA first has engaged in either a thorough, site-specific risk assessment taking the success of the prior engineered remedy into account or the development of nationwide standards generally applicable to the use of engineered remedies that involve peer reviewed science, consultation with the Agency for Toxic Substances and Disease Registry, and/or a public comment process.

(b) A Removal Action is Not Warranted at the Property

i. There is No Imminent and Substantial Danger

A removal action is only justified when there is an imminent and substantial endangerment to the public health or welfare or the environment. 40 C.F.R. § 300.130(c). Factors to support a finding of imminent endangerment are absent here. Similarly, there is no basis to claim a substantial endangerment exists, even under a broad interpretation of "substantial."[1]

This Property is vacant and unoccupied with all structures demolished. As such, there is no completed exposure pathway to present a risk of harm to human health or welfare. This is in stark contrast to sites where EPA has, in the past, required a time critical removal action because of an existing completed exposure pathway that directly exposed individuals to danger. *See, e.g., United States v. Gearing*, 141 F. Supp. 3d 920, 923 (C.D. Ill. 2015) (removal action required to prevent unsecured asbestos and asbestos-containing material in waste piles "from migrating from the former building footprint and being released into the environment."); *United States v. Clark*, 2010 WL 3324834 at *2, No. 08-CV-4158 (N.D. Ill. Aug. 18, 2010) (removal action required due to leaking drums and containers containing hazardous materials at a building "in poor condition with cracked floors and broken windows, [thereby] providing an augmented path of exposure to the outside environment").

[1] "Substantial" has been broadly interpreted by some courts "to mean a reasonable cause for concern that someone or something may be exposed to a risk of harm by a release or a threatened release of a hazardous substance." EPA Memorandum: Use of CERCLA § 106 to Address Endangerments That May Also Be Addressed Under Other Environmental Statutes at 4 (Jan. 18, 2001) (citing *United States v. Conservation Chem.*, 619 F. Supp. 162, 194 (W.D. Mo. 1985)).

Moreover, the VI ROD was specifically designed for the situation at this Property – identifying the appropriate required remedy to address potential risk of VI exposure at a future redevelopment within the MEW Site. *See* VI ROD at 2.[2]

EPA, in the VI ROD, already concluded that the specified remedy in future construction will be protective of human health. Given these facts, there is no imminent risk of exposure to harm – actual or threatened – at the Property.

ii. A Removal Action is Not Necessary or Consistent with the National Contingency Plan

Response costs must be "necessary" and "consistent" with the National Contingency Plan ("NCP"). 42 U.S.C. § 9607(a)(4). The NCP "is designed to make the party seeking response costs choose a cost-effective course of action to protect public health and the environment." *Washington State Dep't of Transp. v. Washington Natural Gas Co.*, 59 F.3d 793, 802 (9th Cir. 1995). EPA's proposal does not satisfy this requirement because it is neither necessary nor consistent with the NCP.

"Necessary" response costs are those that are "necessary to the containment and cleanup of hazardous releases." *United States v. Hardage*, 982 F.2d 1436, 1448 (10th Cir. 1992). EPA's proposed time critical removal action is unnecessary because the VI ROD already specifies a remedy to address VI. *See Waste Mgmt. of Alameda Cty, Inc. v. East Bay Reg'l Park Dist.*, 135 F. Supp. 2d 1071, 1059 (N.D. Cal. 2001) (citations omitted) ("With respect to the necessity requirement, courts will deny recovery where the costs incurred were duplicative of other costs, wasteful, or otherwise unnecessary to address the hazardous substances at issue.").

Engineered mitigation systems at the MEW Site, including several installed at residences previously located on the Property, were successful in reducing VI risk. The selected remedy in the VI ROD for the redevelopment is more protective than the crawl space

[2] The VI ROD remedies are as follows:

- New Construction – Installation of a vapor barrier and passive sub-slab ventilation system (with the ability to be made active);
- Existing Buildings – Depending upon sampling data and related information, the appropriate remedy may be the installation, operation, maintenance, and monitoring of an appropriate sub-slab/sub-membrane ventilation system;
- Commercial Buildings – Operation of the building's HVAC system; and
- Implementation of Institutional Controls (ICs) and Monitoring.

mitigation systems previously used. Requiring a time critical removal action under these circumstances, where an engineered remedy has been selected via the VI ROD as protective, would be "duplicative..., wasteful, [and] otherwise unnecessary."

Remedial action is consistent with the NCP when, "evaluated as a whole, [the action] is in substantial compliance with certain procedural requirements, and results in a CERCLA-quality cleanup" *Carson Harbor Vill., Ltd. v. Cnty. of Los Angeles*, 433 F.3d 1260, 1265 (9th Cir. 2006) (citing 40 C.F.R. § 300.700(c)(3)(i)).[3] To demonstrate a CERCLA-quality cleanup, the action must: "(1) be protective of human health and the environment, (2) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable, and (3) be cost effective." *Waste Mgmt.*, 135 F. Supp. at 1100 (citing 42 U.S.C. § 9621(b)(1)). As acknowledged by EPA, the VI ROD meets the requirements of a CERCLA-quality cleanup: the selected remedy is "protective of human health, complies with federal and state requirements...., is cost effective, and utilizes permanent solutions to the maximum extent practicable." VI ROD at 2. Because the VI ROD already envisions a CERCLA-quality cleanup at a lesser cost, adding an additional layer of response on top of the selected remedy via imposition of a time critical removal action is not cost-effective. As a result, a removal action would be inconsistent with the NCP.

The NCP lists factors to be considered in determining whether a time critical removal action is appropriate and authorized. These factors notably include, among others, actual or potential exposure of contaminants to humans. 40 C.F.R. § 300.415(b)(2). EPA will not be able to demonstrate that these, or similar factors, justify a time critical removal action given the lack of a completed exposure pathway currently at the Property, the requirement for an engineered remedy pursuant to the VI ROD in connection with any future redevelopment, and the other factors discussed in this letter. A removal action cannot be conducted without a finding that it is supported by factors such as those in 40 C.F.R. § 300.415(b)(2).

(c) EPA's Proposal Is Not Appropriate at this Stage of Remediation

A removal action is a short-term action generally taken *before* remedial action "to halt the immediate risks posed by hazardous wastes." *Fairchild Semiconductor Corp. v. EPA*, 769 F. Supp. 1553, 1555 (N.D. Cal. 1991) (citing 42 U.S.C. § 9601(23)). During the removal action, "a site posing a risk of hazardous waste release is studied and various cleanup options considered." *Id.* (citing 42 U.S.C. § 9604(a)). This process of study and analysis already occurred, and was completed, prior to issuance of the VI ROD. EPA has not adequately

[3] The procedural requirements are contained in 40 C.F.R. § 300.700(c)(5) and (6).

demonstrated that the mitigation selected by the VI ROD will be insufficient to provide protection and, as such, there is no reasonable basis to require a removal action in addition to and beyond the remedy selected via the record of decision process to address VI mitigation.

Moreover, a time critical removal action is incompatible with the performance objectives identified by EPA in connection with the Property. The NCP and EPA guidance clearly state that time critical removal actions are short-term actions, typically completed within a year, and intended to address immediate risks to human health or the environment. In contrast, the performance objectives articulated by EPA in connection with the Property will take many years to achieve and, as such, are inconsistent with the use of a time critical removal action. Requiring groundwater pump and treat or long term ground water monitoring and maintenance of a permeable reactive barrier are not the types of actions that EPA can classify as a "removal."

In light of EPA's performance objectives and the absence of an imminent risk to human health, there is no basis to pursue a time critical removal action at this stage. To the extent that thorough investigation and risk assessment may indicate that additional long-term groundwater or soil vapor cleanup could be appropriate and necessary at the Property, such work should be considered as part of a larger remedial evaluation in connection with the separate Operable Unit 3, not boot-strapped as an unnecessary time critical removal action.

(d) EPA Must Comply with Its Own Procedures Concerning Time Critical Removal Actions

"The Supreme Court has long recognized that a federal agency is obliged to abide by the regulations it promulgates." *Sameena Inc. v. U.S. Air Force*, 147 F.3d 1148, 1153 (9th Cir. 1998) (citing *Vitarelli v. Seaton*, 359 U.S. 535, 539 (1959)). EPA must comply with its own regulations in determining whether a removal action is warranted, including the requirement that there be an imminent and substantial endangerment to human health and the environment. *See* 40 C.F.R. §§ 300.130(c); *see also* 300.415(b)(2) (factors to be considered in determining whether a removal action is appropriate). As discussed above, conditions at the Property do not support an endangerment finding.

EPA also must comply with its own procedures. EPA regulations require a ROD amendment if there is a change in the selected remedy that "fundamentally alter[s] the basic features of the selected remedy with respect to scope, performance, or cost." 40 C.F.R. § 300.435(c)(2)(ii). EPA's proposal is a fundamental change of remedy addressing VI at the MEW Site, due to the change from containment (or elimination of exposure pathways) under

the engineered remedy to removal (including long-term pump and treat or groundwater monitoring), and will require a significant increase in cost. *See* EPA, A Guide to Preparing Superfund Proposal Plans, Records of Decision, and Other Remedy Selection Decision Documents ("Superfund Guide") at 7-4 (Jul. 1999) (fundamental changes include a change in the primary treatment method or a change from containment to treatment with a cost increase). Departing from the specified remedies of the VI ROD constitutes an amendment of the VI ROD and would therefore require EPA to follow its regulatory process for a ROD amendment, including a public notice and comment opportunity. Superfund Guide at 7-2–7-5.

EPA cannot depart from its policy and guidance without a reasoned basis for such departure. *See, e.g., Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016) ("One of the basic procedural requirements of administrative rulemaking is that an agency must give adequate reasons for its decisions."); *see also, Modesto Irr. Dist. v. Gutierrez*, 619 F.3d 1024 (9th Cir. 2010) ("departures from prior policy must be recognized and explained"). Failure to do so would be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A*); see also Nat'l Cable & Telecomm. Ass'n. v. Brand X Internet Serv.*, 545 U.S. 967, 981 (2005) ("Unexplained inconsistency [in agency policy] is, at most, a reason for holding an interpretation to be an arbitrary and capricious change from agency practice under the Administrative Procedure Act.").

All evidence indicates that the VI ROD provides an appropriate remedy for VI at the MEW Site and is functioning as intended. There is, therefore, no basis to amend the VI ROD nor is there a basis to overlay an additional removal action on top of the engineered remedy selected in the VI ROD and applicable to this particular Property. Any effort to do so would be arbitrary and capricious and inconsistent with the Administrative Procedures Act, the National Contingency Plan, and EPA's own guidance and procedures.

##

The MEW Companies take protection of human health and welfare at the MEW Site very seriously and have been cooperating with EPA to implement a comprehensive site cleanup for decades. That site cleanup includes proactively implementing the VI ROD, which has successfully addressed VI risk across multiple properties since 2010. The MEW Companies are confident that an engineered remedy is protective at the Property.

HUNTON& WILLIAMS

The MEW Companies welcome further discussion of the issues raised in this letter and the technical issues addressed in the enclosure from Geosyntec. We look forward to continuing to work with EPA to ensure protection of human health and welfare at the MEW Site.

Sincerely,

J. Tom Boer

cc: Jim Colopy, Farella Braun + Martel LLP

Enclosure: Geosyntec Consultants, Technical Memorandum (November 2016)

Geosyntec consultants

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Technical Memorandum

Date:	8 November 2016
To:	Tom Boer - Hunton & Williams (Counsel for Schlumberger Technology Corporation)
Copies to:	James H. Colopy - Farella Braun + Martel LLP (Counsel for Raytheon Company)
From:	Nancy Bice, Geosyntec Consultants John Gallinatti, Geosyntec Consultants Robert Ettinger, Geosyntec Consultants Eric Suchomel, Geosyntec Consultants
Subject:	Evaluation of Basis for Potential EPA Removal Action 277 Fairchild Drive, Mountain View, California Geosyntec Project Number: WR2253

PURPOSE

On behalf of Schlumberger Technology Corporation (Schlumberger) and Raytheon Company (Raytheon), Geosyntec Consultants (Geosyntec) prepared this Technical Memorandum with a technical evaluation of the United States Environmental Protection Agency's (EPA) potential additional actions associated with the properties at 228 Evandale Avenue, 236 Evandale Drive, and 277 Fairchild Drive, Mountain View, California ("277 Fairchild Drive").[1]

This Technical Memorandum evaluates the pre-existing planned remedial measures for the future residential redevelopment project at 277 Fairchild Drive, additional engineering controls to address recent EPA concerns, the existing regulatory structure governing vapor intrusion mitigation at the site, whether the EPA potential additional actions are necessary or feasible, and the technical basis for the EPA potential action.

[1] The three properties are part of a redevelopment project being conducted by Warmington Residential, which is not yet constructed. For the purpose of this memorandum, the term "277 Fairchild Drive" is intended to be inclusive all three properties.

SUMMARY OF CONCLUSIONS

Geosyntec evaluated the potential removal action with respect to the existing EPA regulatory requirements, which consist of the existing Record of Decision (ROD) and vapor intrusion (VI) ROD Amendment for the Middlefield-Ellis-Whisman (MEW) Superfund Study Area. Geosyntec further evaluated the planned remedial measures at the 277 Fairchild Drive project, site conditions, stated risk basis, similar remedies performed at MEW and at other sites in the vicinity, and alternative engineering controls for addressing the potential VI pathway.

In consideration of the above, Geosyntec concludes:

1. EPA already determined that the engineered mitigation system remedy specified under the VI ROD Amendment will be protective of human health, and there is no unacceptable risk with continuing to proceed with that remedy.
2. If EPA determines, for policy reasons or otherwise, that additional action beyond the remedy specified by the VI ROD Amendment is necessary, there are additional engineering controls that can effectively accomplish increased reliability of VI mitigation, and those should be further considered and evaluated.
3. The potential EPA removal action is not necessary to protect human health.
4. The potential EPA removal action is not consistent with the MEW VI ROD Amendment.
5. The potential EPA removal action is not based upon a sound technical analysis of the site-specific risk associated with future vapor intrusion or the site-specific conditions that would affect the ability to reach EPA's contemplated cleanup goals in an acceptable timeframe.
6. EPA's potential performance objectives cannot be completed within the one-year time period for a time-critical removal action, and would be disruptive to the community without a material increase in protectiveness.

BACKGROUND

277 Fairchild Drive Redevelopment Project

In 2014, Warmington Residential (Warmington) notified EPA of their plans to redevelop 277 Fairchild Drive into a residential housing complex. The redevelopment project has been going through planning, design, and permitting with the City of Mountain View, and EPA has been coordinating with the City of Mountain View and Warmington during this process.

The 277 Fairchild Drive property is located within the boundaries of the MEW VI Study Area, as defined by the MEW ROD Amendment for VI pathway.[2] Depending upon site-specific conditions, the ROD Amendment specifies requirements for the VI mitigation measures to be installed within the MEW VI Study Area, including at 277 Fairchild Drive.

The VI ROD Amendment provides that, given the site-specific conditions at 277 Fairchild Drive, the appropriate remedy is installation of a vapor barrier and passive sub-slab ventilation system (with the ability to be made active) at the new construction portions of the project.[3] In a letter dated 22 April 2015, EPA requested that an active sub-slab depressurization (SSD) system be installed at 277 Fairchild Drive, in lieu of a passive system. An active SSD system is accepted as providing increased protectiveness as compared to a passive system. Although the VI ROD Amendment only specified installation of a passive system, in response to the EPA request an active SSD system has been designed for installation at the project.

Schlumberger and Raytheon have volunteered to proceed with installation of one A Zone extraction well at 277 Fairchild Drive for the purpose of capturing chlorinated volatile organic compounds (cVOCs) in groundwater that appear to originate from a source on Evandale Avenue to the south (upgradient) of 277 Fairchild Drive. On 22 August 2016, a Work Plan was submitted to EPA for installation of the extraction well and construction of the associated well vault, conveyance pipeline, and controls.[4]

Investigation Along Evandale Avenue

During a subsurface investigation program implemented between November 2012 and February 2013, grab groundwater samples collected from beneath Evandale Avenue, south of 277 Fairchild Drive, were determined to contain elevated concentrations of cVOCs, in particular trichloroethene (TCE).[5]

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[2] EPA, 2010. Record of Decision Amendment for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California. 16 August.
[3] VI ROD Amendment, Page 34.
[4] Geosyntec, 2016. Extraction Well REG-13A Design and Installation Work Plan, 277 Fairchild Drive, Middlefield-Ellis-Whisman Area, Mountain View, California. 22 August.
[5] Geosyntec, 2013. Grab-Groundwater Assessment and Proposed Well Installations, Middlefield-Ellis-Whisman Regional Groundwater Remediation Program, Mountain View, California. 27 March.

In 2015, EPA identified[6] historical leakage from a sanitary sewer line located beneath Evandale Avenue as the source of TCE in the groundwater underneath Evandale Avenue to the south of 277 Fairchild Drive, and also further to the west along Evandale Avenue. EPA believes the discharges of TCE into the sewer system occurred between approximately 1961 and 1966. EPA has advised that it is currently conducting a search for potentially responsible parties (PRPs) for the cVOCs in groundwater associated with the Evandale Avenue sanitary sewer line.

SUMMARY OF REMOVAL ACTION CONSIDERED BY EPA

The following summarizes Geosyntec's understanding of EPA's potential removal action, and the basis for the decision to require a removal action, based upon EPA's verbal representations during a meeting on 14 October 2016.

At this meeting, EPA advised of its plans to issue a "time critical removal action" due to TCE in soil vapor and groundwater at and in the vicinity of 277 Fairchild Drive. EPA's "time critical" designation indicates that the implementation period for the removal action is less than 12 months from the initiation of site cleanup activities, and that it will be subject to a spending limit of $2 million.

EPA's Stated Basis

EPA's stated basis at the meeting for its potential removal action is their belief that engineered VI mitigation systems do not eliminate the potential exposure pathway, but only reduce the level of risk associated with that pathway. When asked for the technical basis for this statement, EPA referenced one unrelated site where EPA believed that VI controls were less effective than designed because the mitigation system had been compromised by construction activities. EPA has not shared any further information on this other site, and did not indicate whether information on this site is publicly available for review.

EPA did not perform a site-specific risk analysis or engineering analysis as part of its process to assign a level of risk reduction associated with the currently anticipated VI mitigation measures at 277 Fairchild Drive. Instead, EPA relied upon assumptions that a passive VI mitigation system would reduce risk by factor of 10x (i.e., 90% reduction) and that an active VI mitigation system would reduce risk by a factor of 100x (i.e., 99% reduction). EPA did not cite a basis for these

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[6] EPA, 2015. EPA TCE Source Investigation Findings, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, CA. Former NAS Moffett Field, Restoration Advisory Board Meeting, 12 February.

assumptions and factors, other than to say the 10x factor for passive systems is consistent with radon protection guidance[7] and that EPA assumes that active systems would be more protective and therefore assigned a factor of 100x.

EPA Performance Objectives

EPA did not use site-specific information in the setting of performance objectives for its potential removal action. Rather, EPA used the assumed 100x risk reduction factor in combination with generic screening levels, based on short-term action levels for TCE, and generic attenuation factors to generate performance objectives for soil vapor and groundwater.

The following table sets forth the performance objectives being considered by EPA for its potential time critical removal action. EPA indicated that these performance objectives must be met before new construction can begin.

Media and EPA Criteria	EPA Removal Action	EPA Performance Objective
Soil with TCE concentrations greater than 0.5 milligrams per kilogram (mg/kg)	Excavation or soil vapor extraction (SVE)	0.5 mg/kg
Soil vapor with TCE concentrations greater than 20,000 micrograms per cubic meter (µg/m^3)	SVE	6,700 µg/m^3
Groundwater with TCE concentration greater than 1,500 micrograms per liter (µg/L)	In situ bioremediation (ISB), including SVE to control methane and vinyl chloride in vadose zone	1,500 µg/L
Vertical barrier along southern property boundary to prevent TCE migration onto property from Evandale Avenue	Either hydraulic barrier via extraction well(s) or a permeable reactive barrier (PRB) with zero-valent iron (ZVI)	Prevent increase in TCE concentration north of barrier

EPA is also planning to collect additional soil vapor and groundwater samples to determine the spatial extent of soil vapor and groundwater exceeding performance objectives.

[7] The 2010 "Consumer's Guide to Radon Reduction" published by EPA states "some radon reduction systems can reduce radon levels in your home by up to 99%"

BASIS OF REMOVAL ACTION IS NOT CONSISTENT WITH THE MEW VI ROD AMENDMENT AND IS NOT BASED ON A SOUND TECHNICAL ANALYSIS

The existing planned VI remedy for the new construction at 277 Fairchild Drive is consistent with the MEW VI ROD Amendment and follows directly from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process.[8] The basis cited by EPA for its planned removal action is not consistent with the VI ROD Amendment, and is not based upon a sound technical analysis.

In August 2010, EPA issued the ROD Amendment for the VI Pathway at MEW. The ROD Amendment followed an exhaustive seven-year process (2003-2010) of data collection, technical analysis, public discourse, and policy development. In accordance with CERCLA, the process included the production of a Remedial Investigation/Feasibility Study (RI/FS) and a Proposed Plan that was subject to public review and comment. Following the ROD Amendment, EPA issued a Statement of Work that provided the procedures for implementing the ROD Amendment.

For future new construction as planned at 277 Fairchild Drive, the ROD Amendment selects the following remedy to address potential vapor intrusion:

> *"Future (New Construction) Buildings – Installation of a Vapor Barrier and Passive Sub-slab Ventilation System (With the Ability to be Made Active)."*[9]

The ROD Amendment states that the selected remedy is *"protective of human health, complies with federal and state requirements ...., is cost effective, and utilizes permanent solutions to the maximum extent practicable."* EPA further explains the rationale for its decision by stating that VI remedies do not necessarily reduce toxicity, mobility, and volume through treatment ... "*but rather **are designed to prevent exposure** to these contaminants*" (emphasis added).[10]

The VI ROD Amendment therefore reiterates that the VI remedy is designed to prevent exposure, and that cleanup of shallow soil and groundwater is addressed by the original 1989 ROD, not the VI ROD Amendment. EPA's recent statements that a selected VI remedy can only be protective of human health if it reduces risk by a factor of 100x, or that there is an upper

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[8] Haley & Aldrich, 2016, Property-specific Vapor Intrusion Control System Remedial Design, 277 Fairchild Drive, Mountain View, California, April.
[9] VI ROD Amendment, Page 2.
[10] VI ROD Amendment, Page 2

bound of soil vapor or groundwater concentrations above which the remedy selected in the VI ROD Amendment is not protective, is not contained anywhere in the VI ROD Amendment, in the lengthy administrative record supporting that document, or in EPA's 2015 Vapor Intrusion Guidance.

Experience with vapor mitigation systems already installed within the MEW VI Study Area demonstrates that these systems are protective of human health and prevent exposure to potential vapor intrusion at areas with groundwater concentrations equivalent to those at 277 Fairchild. Crawl space mitigation systems were installed by the MEW Regional Groundwater Remediation Program (RGRP)[11] at several residences that previously occupied portions of the properties that now comprise 277 Fairchild Drive. These systems have been demonstrated to be successful.

Based on Geosyntec's experience with sub-slab mitigation systems, there is no technical justification for EPA's assumption that risk reduction that can be achieved by an active SSD system is limited to a factor of 100x. For example, Geosyntec staff conducted an evaluation of 300 homes equipped with vapor mitigation systems in Denver, Colorado. The evaluation indicated that, over a three-year monitoring period following installation, standard active soil depressurization methods using radon fans were capable of reducing the potential for VI by well over 100x (99%) and in some cases reduced the potential for VI by nearly 1000x (99.9%).[12]

EPA also has not performed a site-specific risk assessment at 277 Fairchild Drive, and lacks a site-specific risk analysis to justify a departure from the VI ROD Amendment. The risk-reduction factors used in EPA's analysis, in addition to not being technically supported, were not attributed to site-specific conditions or factors. The soil vapor and groundwater screening levels being applied by EPA are generic and are not related to site-specific conditions.

ALTERNATIVE ENGINEERING CONTROLS LIKELY WOULD RELIABLY INCREASE PROTECTIVENESS

Rather than attempting to proceed with a time-critical removal action that is inconsistent with the remedies selected by the VI ROD Amendment, it is more appropriate to evaluate engineering solutions to address specific concerns that EPA may have with the design, operation, and monitoring of the planned active SSD mitigation system.

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[11] The RGRP is implementing the VI remedy within the portions of the VI Study Area that are not associated with a specific source site.

[12] Folkes, D.J. and D.W. Kurz, 2002. Efficacy of Sub-Slab Depressurization for Mitigation of Vapor Intrrusion of Chlorinated Organic Compounds. In: *Proceedings: Indoor Air 2002.*

Based on our experience with installing and operating vapor mitigation systems at many sites across the country, we are confident that protective systems can be engineered and maintained regardless of the concentrations of cVOCs in the subsurface. While we believe the active SSD system design that was submitted to EPA for 277 Fairchild Drive is fully protective, the following engineering elements could provide additional certainty and redundancy. Examples of these additional elements include:

- Aerated Floor System - The addition of an aerated floor system to the proposed vapor barrier and active extraction systems would provide less friction resistance to airflow and a more efficient sub-slab vapor extraction layer. This could provide a higher level of certainty that the active systems are effectively removing vapors and cutting off the vapor intrusion pathway. By adding this aerated floor system (which would typically operate with only a small radon fan due to the increased flow efficiency) to the type of active blower system included in the existing design, a much higher level of flow than is otherwise warranted can be achieved beneath the building foundations. An example of an aerated floor design is the Cupolex™ system that EPA has already approved for installation in connection with residential redevelopment in the MEW VI Study Area.
- Positive Pressure Systems - An engineered positive pressure layer in the sub-slab vapor mitigation system could provide additional certainty and redundancy. This layer could be placed above the vapor barrier to provide an additional barrier to entry for the building, similar to the positive pressure provided by a heating, ventilation and cooling (HVAC) system in a commercial building.
- Real-Time Pressure Monitoring - Real-time monitoring of sub-slab pressure using transducers beneath the structures could provide immediate notification to system operators of an unscheduled shutdown. This pressure monitoring equipment, in conjunction with readily available automated notification equipment, would allow operators to respond immediately to unscheduled maintenance events.

In summary, while the currently designed vapor mitigation system are expected to effectively protect future residents at 277 Fairchild Drive, consistent with the ROD and VI ROD Amendment already in place for MEW as discussed above, there are additional engineering options that could be added to the system to provide a redundant level of protection if desired.

PERFORMANCE OBJECTIVES ARE INCONSISTENT WITH A TIME CRITICAL REMOVAL ACTION

EPA's potential removal actions, and EPA's assigned performance objectives to those removal actions, cannot be accomplished within the one-year time period required for a "time critical" removal action.

Even under the most aggressive implementation of EPA's potential removal action, many years would likely be required for completion of EPA's removal action and the successful achievement of the performance objectives. Depending on site conditions, decades could more realistically be assumed.

The long durations for EPA's potential removal actions and performance objectives are attributed to the following constraints:

- The potential removal action for groundwater, ISB, typically requires multiple application events to achieve sustained concentration reductions, with each event requiring a 4- to 12-month cycle of *in situ* application and subsequent monitoring. A minimum of 6 months can be expected just for design, approval, and preparation of the first application event.
- TCE concentrations in soil vapor at this property are directly linked to the TCE concentrations in underlying groundwater, and the soil vapor performance goals can only be sustained after TCE concentrations in groundwater are reduced sufficiently. Therefore, the soil vapor removal action would require as much time, at minimum, as the groundwater removal action.
- Simple equilibrium partitioning calculations suggest that the performance goals for groundwater may not be sufficiently low to meet and maintain EPA's assigned performance goals for soil vapor. Thus the groundwater removal action would need to reduce concentrations to levels lower than the performance goals currently stated by EPA.
- The public participation process may further delay implementation of the removal action.

More likely, given the data currently known, implementation of an ISB groundwater remedy would require many decades to achieve EPA's performance objectives. Based on data collected on the 277 Fairchild Drive property and the adjacent Evandale Avenue, TCE concentrations in groundwater exceed 15,000 µg/L in at least some locations on the property. Therefore, ISB would need to sustain a concentration reduction of at least 10x in groundwater. The geologic setting of the property, in which the shallow groundwater occurs within thin irregular layers and

lenses of sand that are surrounded by, and inter-layered with, fine-grained silt and clay, results in diffusion of a significant volume of TCE into the silt and clay as it is transported through the thin sand layers. EPA has concluded that the source of TCE in groundwater pre-dates 1966 and therefore TCE has been diffusing into the fine-grained layers for more than 50 years. Analysis of diffusion into and then back out of fine-grained layers (termed "matrix diffusion") indicates that the duration for diffusion out of the layers will be significantly longer than the duration of diffusion into the layers. This simple relationship alone indicates the likelihood that the removal action will require many decades to achieve the performance objectives. EPA recognized this in their Draft Supplemental Sitewide Groundwater Feasibility Study for MEW, stating that: *"Matrix diffusion effects would generally require multiple treatments over time for dissolved groundwater concentrations to meet RAOs or (potential) MNA transition criteria."*

At the 14 October meeting, EPA referenced two other Mountain View sites as examples of success in remediating TCE with ISB (the joint Intel/Raytheon facility at MEW and the Spectra-Physics Lasers site northwest of MEW in Mountain View). However, ISB remedies at those sites have been ongoing for many years and are still not complete, and demonstrate that EPA's performance objectives will not be completed within one year.

- Intel/Raytheon Facility: ISB at the facility was initiated in 2005, and has been ongoing for 11 years. Since 2005, at least five injection events have been conducted at the facility, in 2005, 2006, 2009, 2010, and 2014. Monitoring results since 2005 suggest that TCE concentrations can be decreased over a period of months to years, if electron donor is routinely injected. Elevated concentrations of *cis*-1,2-dichloroethene (*cis*-1,2-DCE) and vinyl chloride have persisted in some wells, however, suggesting that there is an ongoing source of cVOCs to groundwater, even after 11 years of ISB applications.
- Spectra-Physics Lasers: ISB at the facility was initiated in 2011, and has been ongoing for 5 years. Injection events were completed in 2011, 2013, and 2016. In general, TCE concentrations have decreased since injections began, although some wells with residual TCE were targeted for additional injections in 2016. Similar to the Intel/Raytheon facility, the reductive dechlorination daughter products *cis*-1,2-DCE and vinyl chloride have persisted in some wells since initiation of injections.

Volatilization of TCE from groundwater is likely the primary source of the TCE detected in soil vapor at the 277 Fairchild Drive (assuming no on-site unidentified sources of TCE at 277 Fairchild Drive). The relationship between groundwater concentrations and soil vapor concentrations is complex and highly dependent on site conditions. However, typical default relationships (i.e., Henry's Law, which governs equilibrium partitioning between the soil vapor

and groundwater phases) suggest that a conversion of 422 [$\mu g/m^3_{sv}$]/[$\mu g/L_{gw}$] is conservatively appropriate to convert TCE groundwater concentrations in µg/L to TCE soil vapor concentrations in $\mu g/m^3$. Using this default relationship suggests that successfully achieving the groundwater performance objective of 1,500 µg/L TCE may still result in soil vapor concentrations of 633,000 $\mu g/m^3$ TCE. That concentration of TCE in soil vapor is well above the performance objective contemplated by EPA in its potential removal action. If non-equilibrium partitioning between groundwater and soil vapor is conservatively assumed, previous studies[13] have suggested that soil vapor concentrations of up to 10% of the Henry's Law equilibrium value may be observed at sites with TCE in groundwater. Even under this conservative assumption, the TCE concentration in soil would be 63,300 $\mu g/m^3$, still well above the performance objective EPA has considered for the potential removal action.

Given the above, the performance objectives proposed by EPA are unrealistic for a time critical removal action, and will not be completed within one year, or even several years.

In addition, our experience with the City of Mountain View suggests that it will oppose installation of remedial infrastructure (either an extraction well and associated piping, or a PRB and associated monitoring points) within Evandale Avenue, or within the easement located on the southern end of 277 Fairchild Drive adjacent to Evandale Avenue, which will require significant delays.

Similarly, excavation for and installation of a 40-foot deep PRB is not likely to be feasible given the number of utilities beneath the street in Evandale Avenue, and would be disruptive for many months to the adjoining residential properties. Also, because the expected lifetime of a PRB is not known, the performance of the barrier would need to be routinely monitored, and it is reasonable to expect the barrier would also need to be periodically over-excavated and replaced, further disrupting the community in the future.

Lastly, similar to the situation with implementation of an ISB groundwater remedy, a PRB cannot be relied upon to immediately reduce downgradient concentrations of TCE. Due to matrix diffusion in downgradient, fine-grained soils as discussed above, it could take decades for a PRB system to begin to realize material decreases in concentrations of TCE in downgradient groundwater.

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[13] Fitzpatrick and Fitzgerald, 1996. An Evaluation of Vapor Intrusion into Buildings through a Study of Field Data. *Presented at the 11th Annual Conference on Contaminated Soils*, University of Massachusetts Amherst. October.